

PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

To:

United States Patent and Trademark
Office
(Box PCT)
Crystal Plaza 2
Washington, DC 20231
ÉTATS-UNIS D'AMÉRIQUE

in its capacity as elected Office

Date of mailing:

17 December 1998 (17.12.98)

International application No.:

PCT/IB98/00839

Applicant's or agent's file reference:

PC9576/76488

International filing date:

29 May 1998 (29.05.98)

Priority date:

11 June 1997 (11.06.97)

Applicant:

BRONK, Brian, Scott et al

1. The designated Office is hereby notified of its election made:



in the demand filed with the International preliminary Examining Authority on:

22 September 1998 (22.09.98)



in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer:

J. Zahra

Telephone No.: (41-22) 338.83.38

Copy for the Elected Office (EO/US)

PATENT COOPERATION TREATY

PCT/IB98/00839

PCT

NOTIFICATION OF THE RECORDING
OF A CHANGE

(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

SPIEGEL, Allen, J.
c/o Green, Mark, Charles
Urquhart-Dykes & Lord
91 Wimpole Street
London W1M 8AH
ROYAUME-UNI

Date of mailing (day/month/year) 08 March 1999 (08.03.99)	
Applicant's or agent's file reference PC9576/76488	IMPORTANT NOTIFICATION
International application No. PCT/IB98/00839	International filing date (day/month/year) 29 May 1998 (29.05.98)

1. The following indications appeared on record concerning: <input checked="" type="checkbox"/> the applicant <input checked="" type="checkbox"/> the inventor <input type="checkbox"/> the agent <input type="checkbox"/> the common representative		
Name and Address	State of Nationality	State of Residence
	Telephone No.	
	Facsimile No.	
	Teleprinter No.	
2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning: <input checked="" type="checkbox"/> the person <input type="checkbox"/> the name <input type="checkbox"/> the address <input type="checkbox"/> the nationality <input type="checkbox"/> the residence		
Name and Address CHENG, Hengmiao 39 Mayfield Terrace East Lyme, CT 06333 United States of America	State of Nationality CA	State of Residence US
	Telephone No.	
	Facsimile No.	
	Teleprinter No.	
3. Further observations, if necessary: The applicant/inventor has been added.		
4. A copy of this notification has been sent to: <input checked="" type="checkbox"/> the receiving Office <input type="checkbox"/> the designated Offices concerned <input type="checkbox"/> the International Searching Authority <input checked="" type="checkbox"/> the elected Offices concerned <input checked="" type="checkbox"/> the International Preliminary Examining Authority <input type="checkbox"/> other:		

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer S. De Michiel Telephone No.: (41-22) 338.83.38
---	---

PATENT COOPERATION TREATY

PCT

REC'D 13 JUL 1999

WIPO PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PC9576/76488	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/IB98/00839	International filing date (day/month/year) 29/05/1998	Priority date (day/month/year) 11/06/1997
International Patent Classification (IPC) or national classification and IPC C07H17/08		
Applicant PFIZER PRODUCTS INC. et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 5 sheets, including this cover sheet.

- ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 22/09/1998	Date of completion of this report 09.07.99
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. (+49-89) 2399-0 Tx: 523656 epmu d Fax: (+49-89) 2399-4465	Authorized officer Korsner, S-E Telephone No. (+49-89) 2399 8554 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IB98/00839

I. Basis of the report

1. This report has been drawn on the basis of *(substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.)*:

Description, pages:

1-46 as originally filed

Claims, No.:

1-28 as originally filed

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-28
	No:	Claims	
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-28 (to be settled)
Industrial applicability (IA)	Yes:	Claims	1-28
	No:	Claims	

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IB98/00839

2. Citations and explanations

see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IB98/00839

V. Reasoned statement

The following documents will be referred to in this report:

D1 = US - A - 5 441 939

D2 = FR - A - 4 512 982

Novelty (Article 33(2) PCT)

No objection in view of the prior art.

Inventive step (Article 33(3) PCT)

The claims cover a large number of compounds, including such which have known substituents at the 4"-position [= the focus of the modifications according to the title].

The invention therefore consists of different embodiments, which, though novel, may not all be inventive.

One sub-group of the claimed compounds has novel substitutions at the 4"-position; another sub-group has known 4"-substitutions but -NH at position 9a (compare D1).

In the latter case, it does not appear to be unobvious for the skilled man to start from D1 (-NMe) and move towards the substituent (-NH) from D2. He would then be inside the present scope.

The Description suggests assays which can be carried out in order to establish whether a particular compound has a desired activity.

However, no test results or any other indication [as to why the claimed compounds should have an advantage over those of the prior art] have been disclosed in the Application.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IB98/00839

Considering the broad scope, it is not reasonable that the reader shall perform the bulk of this work.

The inventive step may possibly be found within one or some of the preferred groups, but this has to be settled later; the inventive step for the intermediates of Claims 27-28 will depend on the outcome of the main question.

Since no further information has been submitted by the Applicant, a negative statement has been given in Box V for the inventive step.

VIII. Certain observations

1

The reason for the provisos of Claims 1 and 24 should be clarified.

In case of additional prior art, further implications may arise concerning the inventive step (and unity) for various definitions of R3/R8.

2.

Since R2 = -OH, it would be preferable to include -OH in the formulae rather than having this definition in the text [to improve the overview].

3.

The text of Claim 24 could be considerably reduced by making use of claim dependency; i.e. the repeated definitions on pages 51-52 are not necessary.

4.

The unit psi, which is repeatedly used in the Examples, is no SI-unit.

Finally,

Claim 23 refers to a method for treatment and is therefore not acceptable under all national/regional regulations.

In case of a later European phase, the claim should be redrafted with a view to the Guidelines, C-IV, 4.2.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference PC9576/76488	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/IB 98/00839	International filing date (day/month/year) 29/05/1998	(Earliest) Priority Date (day/month/year) 11/06/1997
Applicant PFIZER PRODUCTS INC. et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. ☒ Certain claims were found unsearchable (see Box I).

2. ☐ Unity of invention is lacking (see Box II).

3. ☐ The international application contains disclosure of a **nucleotide and/or amino acid sequence listing** and the international search was carried out on the basis of the sequence listing

☐ filed with the international application.

☐ furnished by the applicant separately from the international application,

☐ but not accompanied by a statement to the effect that it did not include matter going beyond the disclosure in the international application as filed.

☐ Transcribed by this Authority

4. With regard to the title, ☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this International Search Report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is:

Figure No. -- ☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB 98/00839

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

Although claim 23 is directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB 98/00839

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 C07H17/08 A61K31/70

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 C07H A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5 441 939 A (YANG BINGWEI V ET AL) 15 August 1995 see the whole document ---	1-28
Y	US 4 512 982 A (HAUSKE JAMES R ET AL) 23 April 1985 see column 2 ---	1-28
Y	EP 0 508 699 A (MERCK & CO INC) 14 October 1992 see claims 1-33 ---	1-28
A	EP 0 549 040 A (MERCK & CO INC) 30 June 1993 see claims 1,2 -----	1,22-24, 28



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

23 June 1998

Date of mailing of the international search report

17. 07. 1998

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Scott, J

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IB 98/00839

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5441939	A	15-08-1995	CA 2184734 A	08-09-1995
			EP 0748329 A	18-12-1996
			FI 951003 A	05-09-1995
			WO 9523808 A	08-09-1995
			JP 9511498 T	18-11-1997

US 4512982	A	23-04-1985	AU 549235 B	23-01-1986
			AU 4107085 A	17-10-1985
			CA 1234805 A	05-04-1988
			DE 3565267 A	03-11-1988
			DK 164785 A	10-12-1985
			EG 17459 A	30-12-1992
			EP 0159856 A	30-10-1985
			FI 851449 A	14-10-1985
			JP 60231691 A	18-11-1985
			PT 80270 B	20-10-1987
			US 4518590 A	21-05-1985

EP 0508699	A	14-10-1992	AT 164165 T	15-04-1998
			CA 2064634 A	05-10-1992
			DE 69224765 D	23-04-1998
			DK 508699 T	04-05-1998
			ES 2113410 T	01-05-1998
			JP 2503156 B	05-06-1996
			JP 5255375 A	05-10-1993

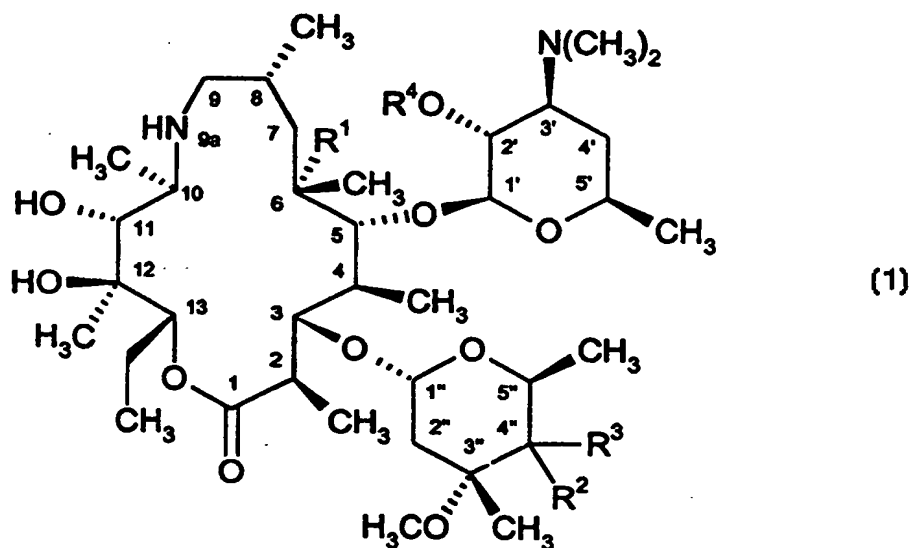
EP 0549040	A	30-06-1993	CA 2083762 A	21-06-1993
			JP 5255374 A	05-10-1993
			JP 6092434 B	16-11-1994



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : C07H 17/08, A61K 31/70		A1	(11) International Publication Number: WO 98/56802
			(43) International Publication Date: 17 December 1998 (17.12.98)
(21) International Application Number: PCT/IB98/00839		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).	
(22) International Filing Date: 29 May 1998 (29.05.98)			
(30) Priority Data: 60/049,348 11 June 1997 (11.06.97) US			
(71) Applicant (for all designated States except US): PFIZER PRODUCTS INC. [US/US]; Eastern Point Road, Groton, CT 06340 (US).			
(72) Inventors; and		Published	
(75) Inventors/Applicants (for US only): BRONK, Brian, Scott [US/US]; 66 Partridge Hollow Road, Gales Ferry, CT 06355 (US). LETAVIC, Michael, Anthony [US/US]; 334 High Street, Mystic, CT 06355 (US). KANEKO, Takushi [JP/US]; 398 Northwood Drive, Guilford, CT 06437 (US). YANG, Bingwei, Vera [US/US]; 27 Lincoln Road, Waterford, CT 06385 (US). GLAZER, Edward, Alan [US/US]; Unit 77, 310 Boston Post Road, Waterford, CT 06385 (US).		With international search report.	
(74) Agents: SPIEGEL, Allen, J.; c/o Green, Mark, Charles, Urquhart-Dykes & Lord, 91 Wimpole Street, London W1M 8AH (GB) et al.			

(54) Title: 4"-SUBSTITUTED-9-DEOXO-9A-AZA-9A-HOMOERYTHROMYCIN A DERIVATIVES



(57) Abstract

The invention relates to compounds of formula (1) and to pharmaceutically acceptable salts thereof. The compounds of formula (1) are antibacterial agents that may be used to treat various bacterial and protozoa infections. The invention also relates to pharmaceutical compositions containing the compounds of formula (1) and to methods of treating bacterial protozoa infections by administering the compounds of formula (1). The invention also relates to methods of preparing the compounds of formula (1) and to intermediates useful in such preparation.

INTERNATIONAL SEARCH REPORT

International Application No

PC./ IB 98/00839

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 C07H17/08 A61K31/70

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 C07H A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5 441 939 A (YANG BINGWEI V ET AL) 15 August 1995 see the whole document ---	1-28
Y	US 4 512 982 A (HAUSKE JAMES R ET AL) 23 April 1985 see column 2 ---	1-28
Y	EP 0 508 699 A (MERCK & CO INC) 14 October 1992 see claims 1-33 ---	1-28
A	EP 0 549 040 A (MERCK & CO INC) 30 June 1993 see claims 1,2 -----	1,22-24, 28

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *Z* document member of the same patent family

Date of the actual completion of the international search

23 June 1998

Date of mailing of the international search report

17. 07. 1998

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Scott, J

INTERNATIONAL SEARCH REPORT

national application No.
PCT/IB 98/00839

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
Although claim 23 is directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IB 98/00839

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5441939	A	15-08-1995	CA 2184734 A EP 0748329 A FI 951003 A WO 9523808 A JP 9511498 T	08-09-1995 18-12-1996 05-09-1995 08-09-1995 18-11-1997
US 4512982	A	23-04-1985	AU 549235 B AU 4107085 A CA 1234805 A DE 3565267 A DK 164785 A EG 17459 A EP 0159856 A FI 851449 A JP 60231691 A PT 80270 B US 4518590 A	23-01-1986 17-10-1985 05-04-1988 03-11-1988 10-12-1985 30-12-1992 30-10-1985 14-10-1985 18-11-1985 20-10-1987 21-05-1985
EP 0508699	A	14-10-1992	AT 164165 T CA 2064634 A DE 69224765 D DK 508699 T ES 2113410 T JP 2503156 B JP 5255375 A	15-04-1998 05-10-1992 23-04-1998 04-05-1998 01-05-1998 05-06-1996 05-10-1993
EP 0549040	A	30-06-1993	CA 2083762 A JP 5255374 A JP 6092434 B	21-06-1993 05-10-1993 16-11-1994